

IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)  
Launch Vehicles in Service or in Development (1)

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CURRENT DEVELOPMENTS AND TECHNICAL CHALLENGES OF LOW-COST SPACE  
TRANSPORTATION SYSTEM**Abstract**

Space transportation system is the basis of space exploration and utilization, which is the major driving force to promote the progress of human society. With the progress of the technology, the space transportation system has been developed from “access to space” to “low-cost access to space”. Low-cost space transportation system has been the trend of space powers all over the world. In this paper, the developments of low cost space transportation system in the United States, Russia, Europe and China are introduced firstly. The reasons for the rapid development in recent years are analyzed, and the incredible opportunities for low-cost space transportation systems development are pointed out, including the rapid growth of demand for access to space, the increasing maturity of technology, capital preference and influx. On this basis, this paper focuses on the technical problems that the low-cost space transportation system needs to pay attention and solve, including the concept of low-cost design, reusable launch vehicle and other advanced technology research and development, mass production and manufacture, concurrent RD.